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ABSTRACT

This case study describes the use of World Wide Web discussion pages and examines the evaluation of online communication protocols in one graduate class. The study begins by describing the theories and grounding literature that guided the development of the online discussion site. The study also describes the process used to develop the online discussion site as well as the graduate class that would use the site. Next, the study describes the protocol layers needed to effectively use the site, including the technical process of using the site and the communication protocols developed by the instructor. The study then describes modifications made to these protocols based on student feedback to the instructor. Finally, the study describes the protocols that evolved from this process. These protocols included use of a content scaffold, establishment of a conversational objective, establishment of a conversational leader and development of a very specific conversation schedule. The study concludes with a discussion of future research. (Contains 19 references.) (Author/AEF)

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The Evolution Of Communication Protocols In An Online Web Discussion Site: A Case Study

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Abstract

This case study describes the use of World Wide Web discussion pages and examines the evolution of online communication protocols in one graduate class. The study begins by describing the theories and grounding literature that guided the development of the online discussion site. The study also describes the process used to develop the online discussion site as well as the graduate class that would use the site. Next the study describes the protocol layers needed to effectively use the site including the technical process of using the site and the communication protocols developed by the instructor. The study then describes modifications made to these protocols based on student feedback to the instructor. Finally, the study describes the protocols that evolved from this process. These protocols included use of a content scaffold, establishment of a conversational objective, establishment of a conversational leader and the development of a very specific conversation schedule. The study concludes with a discussion of future research.

The Evolution Of Communication Protocols In An Online Web Discussion Site: A Case Study

The ways in which humans communicate and the ways that humans use communication to derive meaning from their environments have been the subjects of much research for many years. Communication theory has examined how humans communicate face to face, through printed media and more recently through electronic media, such as the World Wide Web. Classic models of communication, such as the Shannon-Weaver communication model (Heinich, Molenda & Russell, 1993) included the elements of sender, receiver, and medium. These models also looked at the function of noise in any communication channel and how noise might have interfered with the process of communication. Other theorists, such as Berger and Bradac (1982), also examined the rules by which humans communicate. These rules, or protocols, guide the effective communication of ideas and information across a wide variety of media, including voice, print, radio and television.

Protocols used in communication vary greatly depending on factors such as context, culture, and medium (Applbaum, Anatol, Hays, Jenson, Porter, and Mandel, 1973). As the Internet becomes a significant medium through which communication occurs, protocols which can help to guide the efficient and effective communication of thoughts and ideas over the Internet are still evolving. The Internet includes a wide variety of communication media including email, chat, and the ubiquitous web page.

One of the contexts in which the Internet is beginning to be used as a communication tools is in the classroom. Over the past several years, the Internet has been used to deliver a wide variety of instruction. In institutions of higher education, an

increasing number of classes, especially those at the graduate level, are being delivered in part or in whole via the Internet. The purposes behind offering online courses also varied and included anything, from cost savings for the institution, to convenience for the student (Parrott, 1995). The success or failure of using the Internet as a tool for instructional delivery varied. The study of the successes and failures of this medium has just begun and much research has yet to be conducted demonstrating the efficacy of this new medium. In addition to the efficacy, the pedagogy associated with this new medium must also be examined. The pedagogy is the purpose of this article: to look at one, graduate class's use of Web discussion pages. This study examines the three layers of protocols that took place while a group of graduate students engaged in an online discussion, using Web based discussion pages. The first layer described involves the technical layer with the technical aspects of using the web pages themselves. The second layer reveals the rules that the instructor established at the beginning of the course term to guide the students while using the discussion pages. The final layer explains the negotiated rules (among the students and with the instructor) that emerged throughout the term. These layers are all interrelated with the technical level being the primary level upon which the other two depend. The second layer provides the ground rules upon which the objectives of the class are assessed. This layer serves as a foundation for, as well as interacts with, the third layer of communication which is negotiated between the students and teacher in the class. Figure 1 provides a graphic representation of the relationship between these layers. Before these layers are discussed however, the methodology used to guide this research will be discussed, and the course itself will be described to provide the reader with the context in which this study takes place.

Insert Figure 1 here.

Methodology

The study uses a qualitative design grounded in Situated Theory Building (Flower, 1994). Situated Theory Building maintains that teachers naturally engage in research when conducting classes. Teachers begin with a hypothesis based in existing literature. The hypotheses that the teacher formulates guide class activities. As the term progresses, the teacher uses data-gathering techniques to modify the progress of the class, in order to meet the desired outcomes (Flower 1994). These modifications are also known as formative evaluation in the Instructional Technology field (Romiszowski, 1981).

While the data sources used in formative evaluation can be quantitative or qualitative in nature, the data collected for this study is qualitative and comes from a variety of sources. These sources are: verbal comments made by students and recorded in notes; email communications by students; comments made in the discussion pages themselves; and student evaluations. These data sources were used to modify the protocols used by the class when conducting the online discussion sessions. Data sources were then triangulated by the instructor to formulate a picture of which protocols initially formulated by the instructor were effective, which protocols needed to be modified, and which protocols needed to be added to make the discussion sessions more effective.

This paper presents the results of this study. It does so by providing the reader with a detailed description of the context in which this online discussion took place and an overview of the technical issues surrounding discussion pages. The results of the study also provide the reader the protocols initially developed by the instructor, with a

description of how the students interacted with the discussion pages, the results of student feedback, and how student feedback prompted changes in the online discussion protocols.

Grounding Literature

In addition to the literature cited in the text of this paper with regards to methodology, this study also draws from the existing literature base on asynchronous and synchronous Internet communications, especially as it relates to instruction. Asynchronous Internet communications refers to communications in which the two participants are not communicating at the same time. Synchronous communication reefers to communication in which the participants are communicating to each other at the same time such as in a face to face conversation. This study focuses on the asynchronous type of communication. The discussion pages, described later, allow the students in the class to participate in the class conversation throughout a given predetermined period of time.

To research the base of literature, ERIC and PsycLit databases were searched using the terms "Asynchronous and Instruction." A total of 82 citations were retrieved. The abstracts from this search indicated three broad themes that are reflected in the summary of the literature presented there. These themes are: trends associated with the use of asynchronous communications in Instruction; studies concluding that the use of asynchronous Internet communications in an instructional situation was successful; and studies that found problems with the use of asynchronous communications for instruction. The final theme resulted in studies that made recommendations for the effective use of asynchronous Internet instruction.

Overwhelmingly, the literature points to an increased trend among a wide variety of learning institutions toward asynchronous delivery of instruction using the Internet (Edelson, 1998; Parrott, 1995). Other studies cite many reasons for this trend, the most pressing of which is the cost effectiveness of asynchronous distance education, as well as the convenience of asynchronous delivery of instruction via the Internet to the student. As students increasingly move from full time status to part-time or non-traditional status, the ability to deliver learning "just in time" will drive the move on the part of many institutions of higher education towards the use of distance education to deliver instruction (Parrott, 1991).

Another theme in the literature provide studies that demonstrate the successful use of asynchronous Internet instruction. Kubala (1998), Fey and Sission (1996), and Beauvois, M. H. (1992) all note the successful use of asynchronous learning environments in a variety of instructional settings. Li-Ling (1998) notes that asynchronous learning has several advantages including the ability of students to participate in class in a variety of places at a variety of times. Collins and Berge (1998) also state that students participating in a combination of traditional video conferencing and asynchronous internet class discussions engaged in more conversation, and exhibit more participation as compared to traditional video conferencing only. Of particular interest are studies such one by Jewett (1998) that fine many similar advantages to the studies mentioned above, but find no difference in learning gains between students using asynchronous Internet instruction and those in "traditional" classes.

In the search of the literature, other studies point out the limitations of asynchronous Internet based instruction. Among these are Crouch and Montecino (1997)

who report that "asynchronous anxiety" a syndrome in which students felt increased levels of stress while using asynchronous learning systems. Other studies, including one by Huang (1998), also note decreased conversation patterns and few learning gains using synchronous Internet instruction as opposed to face to face interactions.

These limitations are also observed in studies revealed in the protocol theme. But studies, such as the one conducted by Andriole (1995), indicate that factors such as class organization by the instructor are crucial to help overcome these limitations. Newbold (1993) notes that class organization and clear objectives are important to the effective use of asynchronous learning systems.

The Class

The class in which these online discussions took place was a graduate level class in Instructional Systems Technology (IST) at a medium sized southeastern university. The degree program has two tracks: a certification track for students wishing to work in the public schools of North Carolina, and a business track that gives students the necessary skills to work for the private sector. The IST class was the first in a sequence of courses designed by the graduate faculty to build on each other. Students enrolled in the class were presented with an introduction to, and history of, the field of IST. The total enrollment for the course was 17. A majority of the students in the class were employed full-time and worked outside of the city in which the university is located. This means that many of the students had a commute of over 30 minutes. None of the students in the class were from a low socioeconomic status (SES), and one third of the students were from minority groups.

Before the current instructor began teaching the class the class, was lead by a faculty member who taught in both the IST program and the Curriculum and Instruction Programs. He conducted the class in a seminar format with instructor lead discussions of class readings. The class met once a month, and discussions were conducted using email the rest of the month. Since many of the students in the class were employed full-time, the course was historically an evening class which met three hours an evening, one evening a month. The discussions in the course were based on the textbook "Classic Readings in Instructional Technology" (Ely and Plomp, 1996). In addition to the email discussion forum, each student was to annotate each chapter of the book and six journal articles. The capstone project for the course was a paper which required the students to explore a significant issue in the field of IST. During the term covered by this study, the class maintained much the same format. The same textbook was used. Two significant changes in the class occurred with the use of the discussion web site rather than the email format and the addition of a short paper in which the students were to present their own definition of IST.

Layer One: The Discussion Site

The first protocol layer was not negotiated primarily because the software used to establish the discussion site was made available through the university. Since Microsoft writes the software, the user features were not open for major modifications. A few modifications that were made in terms of the navigation structure of the pages will be discussed later in this section. But beyond that, the software determined the protocols in this layer. The instructor of the course developed the discussion site used by the students in this study. The web site itself is located on a web server located in the College of

Education where the instructor works. The server utilizes Microsoft's Windows NT operating system with Microsoft's Internet Information Server being utilized as the Web server. The Web server also utilizes Microsoft's FrontPage extensions to allow faculty and staff to apply FrontPage 98 to develop their own class related web pages. FrontPage 98 contains a web site management component and a web page editor that incorporates many features from Word 97. FrontPage 98 utilizes wizards that automate many common web page creation tasks. One of these Wizards is the Discussion site wizard. By initializing this wizard, the author of a discussion site creates a fully functioning discussion site. The user: answers a few questions, (such as the navigational structure of the site); clicks a "Finish" button which actually creates the pages; and composes the site. These pages consists of a table of contents page, a posting page, and a results page. The wizard also creates headers and footers for the site that contain the navigation elements for the discussion pages.

The instructor modified these elements to provide the site with a unique look and feel hoped that would indicate to the students that they were in the discussion site. These modifications included: modifying the background and text colors of the site; incorporating a university logo in the header; and creating a navigation link to the class web site. The class web site contained items such as evaluation sheets, course syllabi, and class schedule. A corresponding link was also created which took the students from the class home page to the discussion site, assisting students while navigating the discussion pages without having to evoke a complicated URL (web address). The class WebSite also displayed the same "look and feel" as the discussion site to help the students navigate the entire "course space."

When the students accessed the discussion site, they were presented with the Table of Contents Page (see Figure 2) which contained all of the comments made by the students in the class to that point. The student could use the links at the top of the page to post a new comment, reply to a comment, or navigate through the site. The student could also look at the existing postings by scrolling through the comments that were ordered from first to last comments. The content of each comment is indicated by the subject lines which appear on the Table of Content page. To create a new posting, the student would click on the "Post" link that would then take him to a posting page (see Figure 3). The posting page is a Forms page that the student can complete to post a new message to the discussion site. The page allows the student to enter a subject line, their name, and the message itself. Once the student has completed the page, he can click on the submit button at the bottom of the page. The web server then creates a new page that contains the information submitted by the student and a link to the page from the table of contents page. A confirmation page (see Figure 4) is displayed informing the student that the posting has been successful; there is a link to the table of contents page; and a reminder that he may need to refresh the table of contents page in order to see the posting.

Insert Figure 2 here.

Insert Figure 3 here.

Insert Figure 4 here.

To read a posting, the student clicks on one of the subject lines contained on the table of contents page. Next, the student is presented with a page such as the one in Figure 5 that contains the subject line, the author of the comment, and the message. At the top of the page, a reply button is available that, displays a posting form. This form is

very much like the original posting form described earlier except that the subject line is already completed. When the student submits his comments to the discussion, the subject line appears below, tabbed to the right of the original comment. The amount of space that the comments are tabbed in from the original comment indicates whether the comment is an original comment, a reply, or a reply to a reply. This device helps the students determine conversation "threads" and follow the development of the conversations taking place on the discussion site.

Insert Figure 5 here.

Layer Two: Instructor Established Protocols

After the instructor created the discussion site, he developed a set of protocols that the students used when utilizing the site. These protocols or rules were grounded in educational research. Researchers such as Friedman (1978) established, not only a precedence for conducting classroom seminars, but guidelines which serve as the student to student and student to teacher protocols. The instructor determined the content around which the discussions would take place. This content was based on the course readings. Many of the objectives of the course relied upon these readings and the students' discussion of these readings to ensure that the objectives of the course were met.

The second protocol stated that the comments posted by the students should demonstrate that they could relate the information presented in the course readings with their own personal experience. This protocol, established by the instructor, in part determined the basis upon which the success of the discussion site would be evaluated. Asking the students to relate the course readings to their personal experience prompted them to demonstrate mastery of the content of the course and to internalize the

information presented. This became a communicated protocol and it served as the basis through which the students were assessed in this part of the course. The instructor also encouraged the students to use these personal experiences to begin a dialogue about the field of IST, its history, and issues facing the field.

The third protocol that the instructor established was the schedule for the discussion of the chapters. This schedule informed the students of the weekly focus topic for discussion. This schedule was necessary to inform the students of the nature of the conversation and for which chapters they would be responsible. A discussion of this scheduling protocol follows, revealing how especially important it becomes when the conversation takes place in an asynchronous medium, such as Web discussion pages.

The fourth protocol established by the instructor was the necessity for a designated leader in each discussion session. In the second "face to face" class meeting that occurred during the second week of the term, the instructor passed around a sign-up sheet so that the students in the class could choose the session that they wanted to lead. The instructor asked that they lead the discussion by summarizing the chapter's salient points. Later, this protocol was modified in order to stimulate more discussion.

Modification and Evolution of Class Protocols

At the end of the first month of the term, the class met "face to face." During this session the instructor requested feedback from the students about how the online discussion could be modified in order to make it more effective. Many of the students expressed satisfaction with the site. However, two issues surfaced which the students agreed needed to be modified to make the discussion site more effective and easier for them to use. The first of these was the size of the discussion site. Initially, the instructor

designed one discussion site that would include all of the chapters covered during the term. Some of the students had problems loading the initial table of contents page from home due to slow modem connections. Other students also had problems following the multiple topics appearing in the discussion site. In order to resolve these issues, one student suggested that the instructor create multiple discussion sessions, each session dealing with one chapter in the textbook. The instructor made this modification, creating multiple discussion sessions linked by a "home page" that listed the dates, topics, and leader for each week's discussion session. Subsequent student feedback indicated that this resolved, not only access issues, but made the discussions easier to follow for the students.

The second area of modification made to the discussion protocols was a revision of the role of the leader. During the second class session, the students indicated that they were uncertain about the content of their response. One of the students in the class suggested that, rather than summarizing the chapter, the leader should develop a series of questions, each question receiving its own posting. Other students in the class could then respond to each of the questions posted by the discussion leader. Subsequent feedback from the students indicated that this made participating in ensuing discussion sessions easier. The success of this modification was validated by increased activity on the discussion site.

A third modification to the discussion site protocols occurred later in the semester when one of the class leaders waited to lead their session until the night of the regularly scheduled class. Heretofore, the leaders had been posting their questions early in the week, and the discussion had been taking place throughout the week prior to the regularly

scheduled class meeting. The absence of the class leader created a vacuum and few postings appeared on the site relative to the number of postings that had been taking place. Later, the students in the class commented that they had not known "what to do" to participate in the session that week. In order to respond to this dilemma the instructor asked that all of the students in the class post their questions at the beginning of the week during which the discussion session was to take place.

One other modification made to the discussion site protocols was the communication of precisely when one discussion session ends and another begins. When the discussion site was initially set up, this had not been a problem because the course discussion was taking place in one "virtual space." Since the sessions were broken up into weeks, it became necessary for the instructor to set firm rules about the deadline for one chapter's discussion to end and another to begin. The demarcation for the beginning of a chapter discussion was the scheduled class period. This meant that, if chapter five were to be discussed, the discussion would "officially" begin the evening that the discussion of chapter four ended. Discussion could take place throughout the week and would "officially" end the evening of the next scheduled class period. The newly created discussion site home page communicated this schedule to the students. Subsequent student feedback indicated that this clarification of scheduling made the pages much easier to use and the discussions easier to follow.

Discussion

Developing an asynchronous discussion site, such as the one described in this case study, involves many layers or levels of communication. The first level of communication involves the steps that the user needs to follow to be able to use the tool.

However, beyond this lie the rules that have to develop in order to be able to effectively use the medium on an interpersonal level. The evolution of these protocols in one Master's level course has been the focus of this study, beginning with the establishment of basic protocols by the instructor. Student feedback modified those protocols to make the process of communicating in the chosen medium (Web discussion pages) more effective. Finally, the protocols developed revolved around four areas. First, the discussion would be defined by using content scaffold, in this case, was the textbook. Second, an objective was established for the conversation. In this case, the students would be expected to relate the content of the book to their own personal experiences in the discussion pages. Third, a leader was established for each session. Additionally, one of the important roles of the leader was to begin the discussion by posting questions in a timely manner. Finally, a very specific schedule needed to be established to guide everyone in the class to establish when the discussion would take place.

As discussed in the literature review the importance of well-established policies when using asynchronous Internet communication systems is important for success of an asynchronous Internet based course. Much of the grounding literature also documents multiple successes utilizing asynchronous Internet communication systems. These successes were also reflected in many of the student comments given during the final student evaluations for the course. As with the literature these comments centered on two broad areas. First, the discussion pages offered an advantage, allowing students to access the class conversation on a just-in-time basis. This was noted by several students during course evaluations. Finally, the objective the professor set for the discussion pages that they help the students could relate the information in the readings to their own personal

experiences was repeatedly demonstrated by the students in the class. The following comment made by a student when she was discussing needs assessments was typical:

> In the business world, I think that Needs Assessment also done on an external level. If a company is not meeting the needs of it's customers then it needs find out what the problem is. This can be done through needs assessment. Have you ever filled out a comment card at a restaurant? It's a place where you can tell the restaurant what was good and what wasn't. You might consider this evaluation, but couldn't it also be needs assessment. For example, a restaurant might get comments from the lunch crowd that service is too slow. They can then see a need for speedier service during the lunch hour.

As noted earlier, this study is a part of the larger context of literature that contributes to our understanding of the use of asynchronous Internet communications in instructional contexts. Further potential contributions to the literature in this area include a more detailed analysis of the conversation patterns taking place within the discussion site itself, especially as it relates to the growth of knowledge through collaborative interactions; and analysis of the degree to which the use of discussion pages affect specific student learning outcomes.

References

Andriole, S.J. (1995). Asynchronous Learning Networks: Drexel's Experience. T.H.E. Journal, 23 (3), 97-101.

Applbaum, R. L., Anatol, K., Hays, E. R. Jenson, O. O., Porter, R. E., & Mandel, J. E. (1973). Fundamental concepts in human communication. San Francisco, CA: Canfield Press.

Beauvois, M. H.. (1992). Computer assisted classroom discussion in the foreign language classroom: Conversation in slow motion.. Foreign Language Annals, 25, 5 pp. 455-464.

Berger, C. R., & Bradac, J. J. (1982). Language and social knowledge: Uncertainty in interpersonal relations. London: Edward Arnold (Publishers) Ltd.

Collins, M. P., & Berge, Z. L. (1998). Using Web-Conferencing with primarily interacting television courses. Distance Learning '98: Proceedings of the Annual Conference on Distance Teaching & Learning, (ERIC Document Reproduction Service No. ED 422849).

Crouch, M. L. & Montecino, V. (1997). Cyberstress: Asynchronous anxiety or worried in cyberspace. (ERIC Document Reproduction Service No. ED 412938).

Edelson, P. J., (1998). The organization of courses via the Internet, academic aspects, interaction, evaluation and accreditation (Paper presented at the national autonomous university of Mexico). (ERIC Document Reproduction Service No. ED 421644).

Ely, D. P. & Plomp, T. (Eds.). (1996). Classic writings on instructional technology. Englewood, CO: Libraries Unlimited, Inc.

Fey, M. H. & Sission, M. J. (1996). Approaching the information superhighway: Internet collaboration among future writing teachers. Computers and Composition, 13, 1 pp. 37-47.

Flower, L. (1994). Teachers as theory builders. In L. Flower, D. L. Wallace, Norris, L. & R. E. Burnett (Eds.), Making thinking visible: Writing, collaborative planning, and classroom inquiry (pp. 3-22). Urbana, IL: National Council of Teachers of English.

Friedman, P. G. (1978). Interpersonal Communication: Innovations in instruction. Washington, DC: National Education Association.

Heinich, R., Molenda, M., & Russell, J. D. (1993). Instructional media and the new technologies of instruction (4th ed.). New York: Macmillan Publishing Company.

Huang, S. (1998). A comparison between Chinese EFL students' peer response sessions held on networked computers and those held in a face-to-face setting. Paper presented at the annual meeting of the international NELLE Conference, Bielefeld, Germany (ERIC Reproduction Service No. ED 423685).

Jewett, F. T. (1998). The human computer interaction certificate program at Rensselaer Polytechnic Institute: A case study in the benefits and costs of a joint industry/university designed program featuring integrated delivery methods. (Grant No. R309f60088). National Institute on Postsecondary Education, Libraries, and Lifelong Learning. (ERIC Document Reproduction Service No. ED 420291).

Kubala, T. (1998). Teaching on the Internet. Visions: The journal of applied research for the Florida association of community colleges, 2, 1 pp. 44-46.

Li-Ling, C. (1998). Web-Based distance instruction: Design and implications of a cybercourse model. Proceedings of Selected Research and Development Presentations at the National Convention of the Association for Educational Communications and Technology, (ERIC Document Reproduction Service No. ED 423828).

Newbold, W. (1993). Strategies for computer-based distance writing courses. Paper presented at the conference on college composition and communication, San Diego, CA (ERIC Reproduction Service No. ED 377476).

Parrott, S., (1995). Future Leaning: Distance education in community colleges (Report No. EDO-JC-95-02). Washington, DC: Office of Education Research and Improvement. (ERIC Document Reproduction Service No. ED 385311).

Romiszowski, A. J., (1981) Designing instructional systems. New York: Nichols Publishing.

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